CLAIMS

1. A method of manufacturing an electronic device including a step of giving a droplet of a liquid containing a formation material of a member that constitutes the electronic device to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, characterized in that said droplet is given while a position on a droplet given surface to which the droplet is given is corrected in accordance with the distribution of distances between said ejecting portion and said droplet given surface on said substrate which occurs when said substrate and said ejecting portion are relatively moved.

2. A method of manufacturing an electronic device including a step of giving a droplet of a liquid containing a formation material of a member that constitutes the electronic device to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, characterized in that said droplet is given while a distance between said ejecting portion and a droplet given surface on said substrate is detected, and a position on said

droplet given surface to which the droplet is given is corrected on the basis of said detection result.

3. A method of manufacturing an electronic device as claimed in claim 2, wherein the detection of said distance includes a step of measuring the distances between said ejecting portion and all of the droplet given portions within said droplet given surface.

4. A method of manufacturing an electronic device as claimed in claim 2, wherein the detection of said distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface.

5. A method of manufacturing an electronic device as claimed in claim 2, wherein said detection of the distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface, and a step of calculating the distances between said ejecting portion and all of the droplet given portions within said droplet given surface on the basis of said measurement result.

6. A method of manufacturing an electronic device as claimed in any one of claims 1 to 5, wherein the correction of said position to which the droplet is

given is made by maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

7. A method of manufacturing an electronic device as claimed in any one of claims 1 to 5, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

8. A method of manufacturing an electronic device as claimed in any one of claims 1 to 5, wherein the correction of said position to which the droplet is given is made by changing an inclination of said substrate in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

9. A method of manufacturing an electronic device including a step of giving a droplet of a liquid containing a formation material of a member that constitutes the electronic device to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-

surface direction of said substrate, characterized in that said droplet is given while a droplet given position on said substrate surface is corrected in accordance with the distribution of thicknesses of said substrate.

10. A method of manufacturing an electronic device including a step of giving a droplet of a liquid containing a formation material of a member that constitutes the electronic device to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, characterized in that said droplet is given while the thickness of said substrate is detected, and a droplet given position on said substrate surface is corrected on the basis of said detection result.

11. A method of manufacturing an electronic device as claimed in claim 10, wherein said detection of the thickness includes a step of measuring the thicknesses of all of said droplet given portions on said substrate surface.

12. A method of manufacturing an electronic device as claimed in claim 10, wherein said detection of the thickness includes a step of measuring the

thickness of a specific portion on said substrate surface.

13. A method of manufacturing an electronic device as claimed in claim 10, wherein said detection of the thickness includes a step of measuring the thickness of a specific portion on said substrate surface, and a step of calculating the thicknesses of all of said droplet given portions on said substrate surface on the basis of said measurement result.

14. A method of manufacturing an electronic device as claimed in any one of claims 9 to 13, wherein said droplet given position is corrected by maintaining the distance between the ejecting portion and the droplet given surface on said substrate constant.

15. A method of manufacturing an electronic device as claimed in any one of claims 9 to 13, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the thickness of said substrate.

16. A method of manufacturing an electronic device as claimed in any one of claims 9 to 13, wherein

the correction of said position to which the droplet is given is made by changing an inclination of said substrate in accordance with the distribution of the thickness of said substrate.

17. A method of manufacturing an electronic device as claimed in ~~any one of claims 1 to 16~~ CLAIM 1, wherein the droplet is given through an ink jet method.

18. A method of manufacturing an electronic device as claimed in claim 17, wherein said ink jet method is of a system of giving a thermal energy to the liquid to produce a bubble, to thereby eject the droplet.

19. A method of manufacturing an electronic device as claimed in claim 17, wherein said ink jet method is of a system of ejecting the droplet by a piezo-electric element.

20. A method of manufacturing an electron source having a plurality of electron emission elements, characterized in that there is provided a step of giving a droplet of a liquid containing a formation material of an electrically conductive member that constitutes said electron emission element to a plurality of portions on a substrate while said

substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while a position on a droplet given surface to which the droplet is given is corrected in accordance with the distribution of distances between said ejecting portion and said droplet given surface on said substrate which occurs when said substrate and said ejecting portion are relatively moved.

21. A method of manufacturing an electron source having a plurality of electron emission elements, characterized in that there is provided a step of giving a droplet of a liquid containing a formation material of an electrically conductive member that constitutes said electron emission element to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while a distance between said ejecting portion and a droplet given surface on said substrate is detected, and a position on said droplet given surface to which the droplet is given is corrected on the basis of said detection result.

22. A method of manufacturing an electron source

as claimed in claim 21, wherein said detection of the distance includes a step of measuring the distances between said ejecting portion and all of the droplet given portions within said droplet given surface.

23. A method of manufacturing an electron source as claimed in claim 21, wherein said detection of the distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface.

24. A method of manufacturing an electron source as claimed in claim 21, wherein said detection of the distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface, and a step of calculating the distances between said ejecting portion and all of the droplet given portions within said droplet given surface on the basis of said measurement result.

25. A method of manufacturing an electron source as claimed in any one of claims 20 to 24, wherein the correction of said position to which the droplet is given is made by maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

26. A method of manufacturing an electron source as claimed in any one of claims 20 to 24, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

27. A method of manufacturing an electron source as claimed in any one of claims 20 to 24, wherein the correction of said position to which the droplet is given is made by changing an inclination of said substrate in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

28. A method of manufacturing an electron source having a plurality of electron emission elements, characterized in that there is provided a step of giving a droplet of a liquid containing a formation material of an electrically conductive member that constitutes said electron emission element to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while a

position on a substrate surface to which the droplet is given is corrected in accordance with the distribution of a thickness of said substrate.

29. A method of manufacturing an electron source having a plurality of electron emission elements, characterized in that there is provided a step of giving a droplet of a liquid containing a formation material of an electrically conductive member that constitutes said electron emission element to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while a thickness of said substrate is detected, and a droplet given position on said substrate surface is corrected on the basis of said detection result.

30. A method of manufacturing an electron source as claimed in claim 29, wherein said detection of the thickness includes a step of measuring the thicknesses of all of said droplet given portions on said substrate surface.

31. A method of manufacturing an electron source as claimed in claim 29, wherein said detection of the thickness includes a step of measuring a thickness of a

specific portion on said substrate surface.

32. A method of manufacturing an electron source as claimed in claim 29, wherein said detection of the thickness includes a step of measuring a thickness of a specific portion on said substrate surface, and a step of calculating the thicknesses of all of said droplet given portions on said substrate surface on the basis of said measurement result.

33. A method of manufacturing an electron source as claimed in any one of claims 28 to 32, wherein the correction of said position to which the droplet is given is made by maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

34. A method of manufacturing an electron source as claimed in any one of claims 28 to 32, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the thicknesses of said substrate.

35. A method of manufacturing an electron source as claimed in any one of claims 28 to 32, wherein the

correction of said position to which the droplet is given is made by changing an inclination of said substrate in accordance with the distribution of the thicknesses of said substrate.

36. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron emission portion between a pair of electrodes, characterized in that the formation of said electrically conductive film includes a step of giving a droplet of a liquid containing a formation material of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while a position on a droplet given surface to which the droplet is given is corrected in accordance with the distribution of distances between said ejecting portion and said droplet given surface on said substrate which occurs when said substrate and said ejecting portion are relatively moved.

37. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron emission portion between a pair of electrodes,

characterized in that the formation of said electrically conductive film includes a step of giving a droplet of a liquid containing a formation material of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while a distance between said ejecting portion and the droplet given surface on said substrate is detected, and a position on said droplet given surface to which the droplet is given is corrected on the basis of said detection result.

38. A method of manufacturing an electron source as claimed in claim 37, wherein said detection of the distance includes a step of measuring the distances between said ejecting portion and all of said droplet given portions within said droplet given surface.

39. A method of manufacturing an electron source as claimed in claim 37, wherein said detection of the distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface.

40. A method of manufacturing an electron source as claimed in claim 37, wherein said detection of the

distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface, and a step of calculating the distances between said ejecting portion and all of the droplet given portions within said droplet given surface on the basis of said measurement result.

41. A method of manufacturing an electron source as claimed in any one of claims 36 to 40, wherein the correction of said position to which the droplet is given is made by maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

42. A method of manufacturing an electron source as claimed in any one of claims 36 to 40, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

43. A method of manufacturing an electron source as claimed in any one of claims 36 to 40, wherein the correction of said position to which the droplet is given is made by changing an inclination of said

substrate in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

44. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron emission portion between a pair of electrodes, characterized in that the formation of said electrically conductive film includes a step of giving a droplet of a liquid containing a formation material of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while a position on said substrate surface to which the droplet is given is corrected in accordance with the distribution of thicknesses of said substrate.

45. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron emission portion between a pair of electrodes, characterized in that the formation of said electrically conductive film includes a step of giving a droplet of a liquid containing a formation material

of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplet is given while the thickness of said substrate is detected, and a position on said substrate surface to which the droplet is given is corrected on the basis of said detection result.

46. A method of manufacturing an electron source as claimed in claim 45, wherein said detection of the thickness includes a step of measuring the thicknesses of all of said droplet given portions on said substrate surface.

47. A method of manufacturing an electron source as claimed in claim 45, wherein said detection of the thickness includes a step of measuring a thickness of a specific portion on said substrate surface.

48. A method of manufacturing an electron source as claimed in claim 45, wherein said detection of the thickness includes a step of measuring a thickness of a specific portion on said substrate surface, and a step of calculating the thicknesses of all of said droplet given portions on said substrate surface on the basis of said measurement result.

49. A method of manufacturing an electron source as claimed in any one of claims 44 to 48, wherein the correction of said position to which the droplet is given is made by maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

50. A method of manufacturing an electron source as claimed in any one of claims 44 to 48, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the thicknesses of said substrate.

51. A method of manufacturing an electron source as claimed in any one of claims 44 to 48, wherein the correction of said position to which the droplet is given is made by changing an inclination of said substrate in accordance with the distribution of the thicknesses of said substrate.

52. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron emission portion between a pair of electrodes, characterized in that the formation of said pair of

electrodes and said electrically conductive film includes a step of giving the respective droplets of a liquid containing a formation material of said pair of electrodes and a liquid containing a formation material of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplets are given while a position on a droplet given surface to which the droplets are given is corrected in accordance with the distribution of distances between said ejecting portion and said droplet given surface on said substrate which occurs when said substrate and said ejecting portion are relatively moved.

53. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron emission portion between a pair of electrodes, characterized in that the formation of said pair of electrodes and said electrically conductive film includes a step of giving the respective droplets of a liquid containing a formation material of said pair of electrodes and a liquid containing a formation material of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-

surface direction of said substrate, and in that said droplets are given while a distance between said ejecting portion and the droplet given surface on said substrate is detected, and a position on said droplet given surface to which the droplet is given is corrected on the basis of said detection result.

54. A method of manufacturing an electron source as claimed in claim 53, wherein said detection of the distance includes a step of measuring the distances between said ejecting portion and all of said droplet given portions within said droplet given surface.

55. A method of manufacturing an electron source as claimed in claim 53, wherein said detection of the distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface.

56. A method of manufacturing an electron source as claimed in claim 53, wherein said detection of the distance includes a step of measuring a distance between said ejecting portion and a specific portion of said droplet given surface, and a step of calculating the distances between said ejecting portion and all of the droplet given portions within said droplet given surface on the basis of said measurement result.

57. A method of manufacturing an electron source as claimed in any one of claims 52 to 56, wherein the correction of said position to which the droplet is given is made by maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

58. A method of manufacturing an electron source as claimed in any one of claims 52 to 56, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

59. A method of manufacturing an electron source as claimed in any one of claims 52 to 56, wherein the correction of said position to which the droplet is given is made by changing an inclination of said substrate in accordance with the distribution of the distances between said ejecting portion and the droplet given surface on said substrate.

60. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron

emission portion between a pair of electrodes, characterized in that the formation of said pair of electrodes and said electrically conductive film includes a step of giving the respective droplets of a liquid containing a formation material of said pair of electrodes and a liquid containing a formation material of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-surface direction of said substrate, and in that said droplets are given while a position on a substrate surface to which the droplets are given is corrected in accordance with the distribution of thicknesses of said substrate.

61. A method of manufacturing an electron source having a plurality of electron emission elements with an electrically conductive film having an electron emission portion between a pair of electrodes, characterized in that the formation of said pair of electrodes and said electrically conductive film includes a step of giving the respective droplets of a liquid containing a formation material of said pair of electrodes and a liquid containing a formation material of said electrically conductive film to a plurality of portions on a substrate while said substrate and a droplet ejecting portion are moved relatively in an in-

surface direction of said substrate, and in that said droplets are given while a thickness of said substrate is detected, and a position on said substrate surface to which the droplet is given is corrected on the basis of said detection result.

62. A method of manufacturing an electron source as claimed in claim 61, wherein said detection of the thickness includes a step of measuring the thicknesses of all of said droplet given portions on said substrate surface.

63. A method of manufacturing an electron source as claimed in claim 61, wherein said detection of the thickness includes a step of measuring a thickness of a specific portion on said substrate surface.

64. A method of manufacturing an electron source as claimed in claim 61, wherein said detection of the thickness includes a step of measuring a thickness of a specific portion on said substrate surface, and a step of calculating the thicknesses of all of said droplet given portions on said substrate surface on the basis of said measurement result.

65. A method of manufacturing an electron source as claimed in any one of claims 60 to 64, wherein the

correction of said position to which the droplet is given is made by maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

66. A method of manufacturing an electron source as claimed in any one of claims 60 to 64, wherein the correction of said position to which the droplet is given is made by changing a timing at which the droplet is ejected from said ejecting portion in accordance with the distribution of the thicknesses of said substrate.

67. A method of manufacturing an electron source as claimed in any one of claims 60 to 64, wherein the correction of said position to which the droplet is given is made by changing an inclination of said substrate in accordance with the distribution of the thicknesses of said substrate.

68. A method of manufacturing an electron source as claimed in ~~any one of claims 20 to 67~~ CLAIM 68, wherein said electron source is an electron source including a plurality of electron emission element columns each having a plurality of electron emission elements connected between a pair of wirings.

69. A method of manufacturing an electron source as claimed in ~~any one of claims 20 to 67~~ CLAIM 20, wherein said electron source is an electron source in which a plurality of electron emission elements are arranged in matrix by a plurality of row wirings and a plurality of column wirings.

70. A method of manufacturing an electron source as claimed in ~~any one of claims 20 to 69~~ CLAIM 20, wherein said droplet is given through an ink jet method.

71. A method of manufacturing an electron source as claimed in claim 70, wherein said ink jet method is of a system of giving a thermal energy to the liquid to produce a bubble, to thereby eject the droplet.

72. A method of manufacturing an electron source as claimed in claim 70, wherein said ink jet method is of a system of ejecting the droplet by a piezo-electric element.

73. A method of manufacturing an image forming apparatus having an electron source and an image forming member onto which electrons are irradiated from said electron source, characterized in that said electron source is manufactured by ~~any one of the above-described methods as claimed in claims 20 to 72.~~ CLAIM 20

74. A device of manufacturing an electronic device, characterized by comprising: an ejecting portion which ejects a droplet of a liquid containing a formation material of a member that constitutes the electronic device; means for relatively moving a substrate on which said electronic device is formed and said ejecting portion in an in-surface direction of said substrate; means for detecting a distance between said ejecting portion and a droplet given surface on said substrate; and means for controlling a position on said droplet given surface to which said droplet is given on the basis of said detection result.

75. A device of manufacturing an electronic device as claimed in claim 74, wherein said means for detecting the distance includes a mechanism for measuring the distances between said ejecting portion and all of the droplet given portions within said droplet given surface.

76. A device of manufacturing an electronic device as claimed in claim 74, wherein said means for detecting the distance includes a mechanism for measuring a distance between said ejecting portion and a specific portion of said droplet given surface.

77. A device of manufacturing an electronic

device as claimed in claim 74, wherein said means for detecting the distance includes a mechanism for measuring a distance between said ejecting portion and a specific portion of said droplet given surface, and a mechanism for calculating the distances between said ejecting portion and all of the droplet given portions within said droplet given surface on the basis of said measurement result.

78. A device of manufacturing an electronic device as claimed in any one of claims 74 to 77, wherein said means for controlling the position to which the droplet is given includes a mechanism for maintaining the distance between said ejecting portion and the droplet given surface on said substrate constant.

79. A device of manufacturing an electronic device as claimed in any one of claims 74 to 77, wherein said means for controlling the position to which the droplet is given includes a mechanism for controlling a timing at which the droplet is ejected from said ejecting portion.

80. A device of manufacturing an electronic device as claimed in any one of claims 74 to 77, wherein said means for controlling the position to

which the droplet is given includes a mechanism for controlling an inclination of said substrate.

81. A device of manufacturing an electronic device, characterized by comprising: an ejecting portion which ejects a droplet of a liquid containing a formation material of a member that constitutes the electronic device; means for relatively moving a substrate on which said electronic device is formed and said ejecting portion in an in-surface direction of said substrate; means for detecting a thickness of said substrate; and means for controlling a position on said substrate surface to which said droplet is given on the basis of said detection result.

82. A device of manufacturing an electronic device as claimed in claim 81, wherein said means for detecting the thickness includes a mechanism for measuring the thicknesses of all of said droplet given portions on said substrate surface.

83. A device of manufacturing an electronic device as claimed in claim 81, wherein said means for detecting the thickness includes a mechanism for measuring a thickness of a specific portion on said substrate surface.

84. A device of manufacturing an electronic device as claimed in claim 81, wherein said means for detecting the thickness includes a mechanism for measuring a thickness of a specific portion on said substrate surface, and a mechanism for calculating the thicknesses of all of said droplet given portions on said substrate surface on the basis of said measurement result.

85. A device of manufacturing an electronic device as claimed in any one of claims 81 to 84, wherein said means for controlling the droplet given position maintains the distance between the ejecting portion and the droplet given surface on said substrate constant.

86. A device of manufacturing an electronic device as claimed in any one of claims 81 to 84, wherein said means for controlling the position to which the droplet is given includes a mechanism for controlling a timing at which the droplet is ejected from said ejecting portion.

87. A device of manufacturing an electronic device as claimed in any one of claims 81 to 84, wherein said means for controlling the position to which the droplet is given includes a mechanism for

controlling an inclination of said substrate.

88. A device of manufacturing an electronic device as claimed in ~~any one of claims 74 to 87~~ CLAIM 74, wherein said ejecting portion comprises a nozzle of an ink jet device.

89. A device of manufacturing an electronic device as claimed in claim 88, wherein said ink jet device is of a system of giving a thermal energy to the liquid to produce a bubble, to thereby eject the droplet.

90. A device of manufacturing an electronic device as claimed in claim 88, wherein said ink jet device is of a system of ejecting the droplet by a piezo-electric element.

91. A device of manufacturing an electronic device as claimed in any one of claims 74 to 87, wherein said electronic device comprises an electron source including a plurality of electron emission elements.

92. A device of manufacturing an electronic device as claimed in claim 91, wherein said electron source comprises an electron source including a

plurality of electron emission element columns having a plurality of electron emission elements connected between a pair of wirings.

93. A device of manufacturing an electronic device as claimed in claim 91, wherein said electron source comprises an electron source in which a plurality of electron emission elements are arranged in matrix by a plurality of row wirings and a plurality of column wirings.

94. A device of manufacturing an electronic device as claimed in ~~any one of claims 91 to 93~~ CLAIM 91, wherein said electron emission element comprises an electron emission element including an electrically conductive film having an electron emission portion between a pair of electrodes.